15

ΑO

18

20

OH. Figure 2 HO. HO. лCH₃ лCH₃ лCH₃ CH₃ a, b, c CH₃ ČH₃ d 22 23 $\dot{N}H_2$ 24 Boc ō f, b e, b b g ОН OH. NCH₃ ·CH₃ лCH₃ "СH₃ CH₃ ·CH₃ CH₃ CH₃ HO N H 15 T CH₃ 16 14 Ō \mathbf{o} 20 Ō h ·OH HO. vCH₃ лCH₃ "CH₃ CH₃ CH₃ HO HO N T CH₃ O 19 17 $(H_3C)_2N$

Reagents: (a) Boc-L-valine, BOP, TEA, THF; (b) TFA, CH₂Cl₂; (c) borane/dimethyl sulfide; (d) Boc-D-7-hydroxy-1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid, BOP, TEA, THF; (e) Boc-D-1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid, BOP, TEA, THF; (f) Boc-L-7-hydroxy-1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid, BOP, TEA, THF; (g) Lithium aluminum hydride, THF; (h) formalin, NaBH(OAc)₃, dichloroethane; (i) N,N-dimethylglycine, BOP, TEA, THF

Figure 3

Reagents: (a) Boc-L-valine, BOP, TEA, THF; (b) TFA, CH₂Cl₂; (c) borane/dimethyl sulfide; (d) Boc-D-7-hydroxy-1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid, BOP, TEA, THF